

Melting diagram of the system ...

S/020/62/142/005/018/022  
B110/B101

melting at 385°C. In the heating curves, additional irreversible heat effects occur (1) at 100°C, removal of traces of adsorbed water, and (2) in the course of an intermediate stage of the establishment of phase equilibrium in the solid and, partly, in the liquid state. Therefore, the cooling curves of mixtures heated to  $\leq 690^\circ\text{C}$  were used for plotting the melting diagram. The melting diagram (Fig. 1) for  $\text{KOH-KBH}_4$  consists of two branches of crystallization of  $\text{KOH}$  and  $\text{KBH}_4$  intersecting in the eutectic at 347°C and 5.3 %  $\text{KBH}_4$  concentration. The constant temperature of  $\sim 245^\circ\text{C}$  corresponding to polymorphous  $\text{KOH}$  conversion in the part of the system rich in  $\text{KOH}$  proves the absence of solid solutions based on  $\text{KOH}$ . A slight  $\text{H}_2$  separation is observed between 450 and 550°C, the maximum of which corresponds to the equimolar ratio of components. When the melts are dissolved,  $\text{H}_2$  is also separated, sometimes with inflammation, particularly in the central part of the system, probably due to:  $\text{KBH}_4 \cdot \text{KOH} \rightarrow \text{KBH}_3\text{OH} + \text{KH}$ . The dissociation pressure of  $\text{KH}$  attains atmospheric pressure at  $\sim 428^\circ\text{C}$ , and the violent reaction with water causes ignition. Thus, the system  $\text{KOH-KBH}_4$  is a pseudobinary cross section of a quaternary system. The

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Melting diagram of the system ...

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double melts of the central part have properties and activity of KH at temperatures that lie high above the range of its stability in a pure state. There are 1 figure and 6 references: 4 Soviet and 2 non-Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences USSR)

PRESENTED: September 11, 1961, by I. I. Chernyayev, Academician

SUBMITTED: September 6, 1961

Fig. 1. Melting diagram for KOH -  $\text{KBH}_4$ . Legend: (1) Temperature; (2) % by weight; Ж - liquid.

Card 3/4

MIKHEYEVA, V.I.; SELIVOKHINA, M.S.; KRYUKOVA, O.N.

Melting diagram in the system potassium hydroxide - potassium borohydride.  
Zhur.georg.khim. 7 no.7:1622-1627 JI '62. (MIRA L6:3)  
(Potassium hydroxide) (Potassium borohydride)

L 10658-63

EWB(q)/EWT(m)/BDS--AFFTC/ASD--JD/JXT(IJP)

ACCESSION NR: AP3001211

S/0078/63/008/006/1314/1319

AUTHOR: Mikheyeva, V. I.; Sterlyadkina, E. K.; Konstantinova, A. I.; Kryukova, O. N.

TITLE: Absorption of hydrogen by alloys of cerium with magnesium

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 6, 1963, 1314-1319

TOPIC TAGS: absorption; hydrogen; alloys; cerium; magnesium

ABSTRACT: Hydrogen absorption by cerium-magnesium alloys was investigated: alloys having more than 50 at% Mg did not hydrogenate at room temperature; in alloys containing up to 30% Mg, the Ce appears to be preferentially hydrogenated; in the 30-50% Mg range, absorption corresponds to the formula  $CeH_{sub 3} \cdot nMgH_{sub 2}$ , in particular,  $MgH_{sub 2} \cdot 2CeH_{sub 3}$  and  $MgH_{sub 2} \cdot CeH_{sub 3}$ . Increase in Mg from 0-50% increases the induction period and hydrogenation time. If reaction is carried out at elevated temperature, alloys having up to 66% Mg can be hydrogenated but amount of H absorption is decreased. According to chemical and thermographic examination, the hydrogenation products are mechanical mixtures of the hydrides whose properties are distinct from those of  $MgH_{sub 2}$  and  $CeH_{sub 3}$  taken separately. Orig. art. has: 4 figures and 2 tables.

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L 10658-63

ACCESSION NR: AP3001211

2

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova,  
Akademii nauk SSSR (Institute of General and Inorganic Chemistry, Academy of  
Sciences, SSSR) Laboratoriya khimii gidradov i bora (Laboratory of Hydrides and  
Boron Chemistry)

SUBMITTED: 06Jul62


DATE ACQD: 01Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 006

OTHER: 007

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Card 2/2

**"APPROVED FOR RELEASE: 04/03/2001**

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DEGTYAREVA, O.F.; FEDYAYEVA, N.V.; OSTROVSKAYA, M.F.; prinyimay uchastiye:  
PROSKURYAKOVA, A.Ye.; KRYUKOVA, P.A.; ASTAKHINA, L.G.

Spectral analysis of iron oxide by the vaporization method.  
Zav.lab. 27 no.7:842-844 '61. (MIRA 14:7)  
(Iron oxide--Spectra)

DEGTYAREVA, O.F.; FEDYAYEVA, N.V.; OSTROVSKAYA, M.F.; ASTAKHINA, L.G.;  
prinimali uchastiye: KRYUKOVA, P.A., PROSKURYAKOVA, A.Ye.

Determination of impurities in copper oxide by the spectral  
method. Zav.lab. 27 nq, 7:844-845 '61. (MIRA 14:7)  
(Copper oxide--Spectra)

USSR/Chemical Technology. Chemical Products and Their Application -- Food industry,  
I-28

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 6732

Author: Vetrova, Z. I., Tsypalakova, G. I., Kryukova, P. I.

Institution: None

Title: Cooling of Horse Mackerel in Refrigeration Plants

Original

Publication: Ryb. kh-vo, 1956, No 4, 10-11

Abstract: Investigation of different procedures of cooling horse mackerel. Most appropriate is liquid cooling in water at 0-4°, which reduces the duration of cooling to 30-40 minutes, and also the consumption of ice to 50% of the weight of the fish. Numerous experiments in full scale operation have shown the appropriateness of the use of chlorinated water. Best results were obtained on addition to the water of chlorinated ice containing 150 mg active chlorine per 1 liter of thaw water. Mackerel cooled in sea water with addition of such ice exhibited good characteristics.

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with  $\delta \approx 0.1$  respectively, for cones of semiapex  $\alpha = 10.5^\circ, 20^\circ$ , and  $31.5^\circ$



MILSKIY, Mark Borisovich; KRYUKOVA, S.N., red.; NAZAROVA, A.S.,  
tekhn. red.

[How to build up a child's health]Kak ukrepit' zdorov'e re-  
benka. Moskva, Izd-vo "Znanie," 1962. 47 p. (Narodnyi uni-  
versitet kul'tury: Fakul'tet zdorov'ia, no.5) (MIRA 15:8)  
(CHILDREN--CARE AND HYGIENE)

MARSHAK, Maks Solomonovich, prof.; KRYUKOVA, S.N., red.;  
ATROSHCHENKO, L.Ye., tekhn. red.

[Vitamins and health] Vitaminy i zdorov'e. Moskva, Izd-  
vo "Znanie," 1963. 39 p. (Narodnyi universitet kul'tury:  
Fakul'tet zdorov'ia, no.10) (MIRA 17:1)



17-1

Polarographic determination of lead and arsenic in reagent phosphoric acid. T. A. KATYKOVA (Zavod. Lab., 1937, 8, 1343-1393). The polarographic determination of traces ( $>0.0001\%$ ) of Pb and As in  $H_3PO_4$  is performed most conveniently in the presence of conc.  $H_2PO_4$ . Methods of determining Pb and As separately or in the presence of each other are described; in the latter case HCl must be added. Since  $As^{5+}$  is not reducible in  $H_3PO_4$ , but can be converted into  $As^{3+}$  by boiling with  $N_2H_4$ , both ions can be determined. The effect of admixtures is discussed and limits are given for permissible contents of  $Ca^{2+}$ ,  $Fe^{3+}$ ,  $Al^{3+}$ ,  $F^-$ ,  $SO_4^{2-}$ ,  $K^+$ ,  $Na^+$ , and  $SiO_2$ . The results are accurate to within  $\pm 3\%$  for Pb and  $\pm 5\%$  for As. Diagrams and tables are given. D. G.

PROCESS AND PROPERTIES INDEX

The rapid determination of the total phosphorus in the gases from the phosphorus distillation furnace. T. A. Kryukova and O. F. Lyutringauere. *J. Chem. Ind.* (U. S. S. R.) 14, 1404-7(1957).—P and PH<sub>3</sub> are oxidized by moist air to a mist of H<sub>3</sub>PO<sub>4</sub>, H<sub>2</sub>PO<sub>4</sub> and H<sub>2</sub>PON. The fog of these acids is pptd. in an electrofilter and the soln. thus obtained is titrated with NaOH in the presence of methyl orange. NaH<sub>2</sub>PO<sub>4</sub>, NaH<sub>2</sub>PO<sub>3</sub> and NaH<sub>2</sub>PO<sub>2</sub> are formed. App. for the detn. is described in detail.  
H. M. Leicester

7

ASM-A METALLURGICAL LITERATURE CLASSIFICATION

PRECEDENCE AND PRESENT INDEX

The rate of crystallization of ferric phosphates from supersaturated solutions. M. I. Chaykovskiy and L. A. Karginova. *Transt. Sci. Inst. Fertilizers and In-*  
*cluding* (U. S. S. R.) No. 117, 102 (1967).  
 Fe(OH)<sub>3</sub> and H<sub>2</sub>PO<sub>4</sub> were used to prep. the Fe phosphates for study at 30°. The crystn. curves are divided into 3 periods: latent, rapid crystn. and residual crystn. There is a definite logarithmic relation between the latent period and the rate:  $\log t \propto (a/A) - b$ , where  $t$  is time of the latent period,  $A$  is rate and  $a$  and  $b$  are const. Addition of crystals of Fe phosphate practically eliminate the latent period. This period is also reduced by the addition of sulfates and other constituents.

J. S. Joffe

ASO 554 METALLURGICAL LITERATURE CLASSIFICATION

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<p>Polarographic determination of arsenic and iron in contact sulfuric acid. T. A. Kryukova, <i>Zeroditsya Lab. 7</i>, 273-6(1988).—A 2-g. sample in a little water is neutralized with <math>\text{Na}_2\text{CO}_3</math> to methyl orange and then is dild. with 2% of pure <math>\text{H}_2\text{SO}_4</math> to 100 ml. As *** is detd. in 10 ml. of the soln. in the presence of a slight excess of K tartrate, and Fe** is detd. in another aliquot part by the method of Dymov, <i>et al.</i> (C. A. 31, 6130). Chas. Blane</p>																			
ASB-55A METALLURGICAL LITERATURE CLASSIFICATION																			
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1ST AND 2ND COPIES										PROCESSING AND PROPERTY INDEX										3RD AND 4TH COPIES									
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<p>Oxidation of phosphorus at solid surfaces.  T. A. KASUKOVA (J. Gen. Chem. Russ., 1939, 9, 577-586).—The process of oxidation by atm. <math>O_2</math> or ozonised air of yellow P finely distributed on <math>SiO_2</math> powder at 20° involves the stages <math>P \rightarrow P_2O \rightarrow P_4O_6 \rightarrow P_4O_{10}</math>. The ratio of <math>P_2O</math> to <math>P_4O_{10}</math> in the final reaction product is 2:3. The mechanism of the reaction is discussed.  R. T.</p>																													
<p>ASB S.A. METALLURGICAL LITERATURE CLASSIFICATION</p>																													



BC

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TEST AND EMP. PROSES

PROCESSES AND PROPERTIES INDEX

Determination of solubility of sparingly soluble salts with the polarograph. T. A. KRIKOROVA (J. Phys. Chem. Russ., 1939, 13, 683-700).—The experimental technique is described. The solubilities of  $Hg^{2+}$  salts may be calc. from the anode potential in the anodic polarization of the dropping electrode. R. C.

ASAC-554 METALLURGICAL LITERATURE CLASSIFICATION

CA 4

Changes in the reduction potentials of lead, cadmium and zinc, depending on the concentration of the electrolyte. *Trudy Vsesoyuz. Nauchno. Issledovaniy. Anal. Khim., Abad. Nauk S. S. R.* 1, 171 (1950). *Khm. Referat. Zhur.* 1950, No. 2, 65.—Increasing the concn. of chlorides considerably displaces the reduction potential of Pb, Cd and Zn in the neg. direction. (Vent. ing expts. indicate that there exists a nearly linear relation between the reduction potential and the log of the activity of the electrolyte. W. R. Himm

ca

Oxidation of phosphorus on solid surfaces. T. A. Knyukha, *J. Gen. Chem. (U. S. S. R.)* 9, 577 (1979). Yellow P, deposited in the amt. of 0.85-1.02% on finely ground quartzite, is completely oxidized with an at 20° and also precursor to P<sub>2</sub>O<sub>3</sub>, P<sub>2</sub>O<sub>4</sub>, P<sub>2</sub>O<sub>5</sub> and P<sub>2</sub>O<sub>6</sub>. The ratio of P<sub>2</sub>O<sub>3</sub> to P<sub>2</sub>O<sub>5</sub> in the final reaction product is always 2:3; thus the formation of the two compounds is related. The oxidation, which occurs chiefly within a period of 3-5 min, is preceded by a period of activation, ranging from 30 min. when the deposition of P is 1.02% to 30 hrs. for 0.85% P. If O<sub>2</sub> is used as oxidizing agent the activation period is eliminated and, in addn., P<sub>2</sub>O<sub>3</sub> is completely oxidized to P<sub>2</sub>O<sub>5</sub>. The amt. of P<sub>2</sub>O<sub>3</sub> remains unchanged. To prove its identity P<sub>2</sub>O<sub>3</sub> was prep'd by the method of Michaelis and Pitsch (*Ber.* 32, 137, 1900). The mechanism of the oxidation is discussed. [1]

AND THE INTERNATIONAL LITERATURE CLASSIFICATION

*Theoretical problems in the practical polarographic work. T. A. Krinova (Zaved. Lab., 1946, 9, 66) — Some difficulties of polarography are reviewed, including the polarographic man., its dependence on the movement near the cathode and on the concentration of the supporting electrolyte, the extinguishing of the man. and the secondary effects of the extinguishing substance, the influence of the concentration of the supporting electrolyte on the position and shape of polarographic waves, polarographic waves of ions reducible in steps, and also substitution of solid cathodes for Hg drops.*

J. J. H.

CA		2	
<p>Polarographic determination of the solubilities of slightly soluble salts. T. A. Krynshin. <i>J. Phys. Chem.</i> (U. S. A. R.) 13, 693-700 (1959).—Exptl. data are given on the kinetics of crystn. of <math>PbSO_4</math> from <math>H_2SO_4</math> solns. and of <math>PbHAsO_4</math> from <math>CaHAsO_4 + HCOOH</math> solns. The polarographically detd. solubilities of <math>PbSO_4</math> in <math>H_2SO_4</math> are 0.0185 g./l. for 0.049 g./l. <math>H_2SO_4</math>; 0.0089, 0.348; 0.0043, 4.90; 0.0048, 49.0. From measurements on the anode polarizations of a drop electrode, the solubilities of <math>Hg^{2+}</math> salts at 25° are: <math>IO_3^-</math>, 6.0; <math>PO_4^{3-}</math>, 3.5; <math>CNS^-</math>, 2.7; <math>OH^-</math>, 0.082; <math>CO_3^{2-}</math>, 0.098; <math>SO_4^{2-}</math>, 0.00018; all <math>\times 10^{-4}</math>, and <math>CN^-</math> <math>2.1 \times 10^{-4}</math>; <math>S_2O_8^{2-}</math>, <math>2.2 \times 10^{-4}</math>; <math>S^{2-}</math>, <math>2.5 \times 10^{-4}</math>. The drop-electrode method is 10 times as rapid as the direct concn. detn. method, and the results differ at most by a factor of 2.</p> <p>F. H. Rathmann</p>			
Sci. Inst. Fertilizers, Insectofungicides, Lab 7 Production Supervision			
A.S.A.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION			
LONGER NO.	100000 HIGHER NO.	QUALITY	REMARKS
100000 HIGHER NO.	100000 HIGHER NO.	100000 HIGHER NO.	100000 HIGHER NO.

Relation between the height of the polarographic wave of a cation and the concentration of the background. T. A. Kriakova (*Zh. anal. khim.*, 1960, 5, 606-700).—The height of the polarographic wave of, say, 0.0001M-Pb in KCl solution depends on [KCl]. This is due to movements of solution near Hg drops as the rate  $v$  of the movement depends on the nature and concn. of the "background electrolyte." If this concn. is  $>1N$ ,  $v$  is independent of the salts present in small concns. The current increase  $\Delta i$  due to  $v$  is  $\propto iC$ ,  $C$  being the concn. of, say, Pb". If  $v$  for a given background electrolyte is known for all polarizing voltages,  $C$  can be calc. by measuring the height of the Pb wave without and in presence of gelatin which reduces  $v$  to zero. The calculation gives correct results for Pb, Cd, Mn, Co, Fe, Cr, and Th in saturated KCl.

J. J. N.

ca

1

Appearance and end of the motion of electrolytes in a dropping mercury cathode. I. A. Katskhisa and H. N. Katskhisa. *J. Phys. Chem.* 41: 2535, 1937, 11:4-5 (1937).--K. describes a method for observing the motion of an electrolyte in a drop electrode by means of suspended charcoal particles. From exptl. data K. and K. find that as a result of unequal polarization of the drops when a p.d. exists in the soln., an upward or downward motion takes place at potentials corresponding, resp., to the cathode and anode branches, and ceases when the max. potential of the electrocapillary curve is reached. Upward motion ceases at  $-2.1 \pm 0.2$  v. and is accompanied by  $H_2$  evolution. For large potential drops, upward motion also occurs in the anode branch. Motion may also cease owing to the formation of hydrated oxide gels of metals as in the case of  $Fe^{III}$ ,  $Pb^{II}$ ,  $Cd^{II}$ ,  $Cu^{II}$ ,  $Ni^{II}$ ,  $Co^{II}$ ,  $Mn^{II}$ ,  $Al$ ,  $La$ ,  $Ce$ , etc., either at the limitation (depolarization) potential of  $O_2$  or on evolution of  $H_2$ . In cases in which motion does not cease, a max. current is observed.

F. H. Rathmann





CA

Reduction of trivalent arsenic by the dropping mercury electrode. T. A. Kryshova. *Zashchita Lab. 9, 640 7 (1940).*—Polarograms of the reduction of As are obtainable in acid soln. but not in alk. or neutral. The curve for As is complex with inorg. acids but simple with org. and very dil. inorg. acids. Polarograms should be taken for very dil. inorg. acids. The first wave in the curve is due to reduction of  $As^{III}$ , while the 2nd and 3rd waves correspond to the reduction of  $H_2AsO_4$  and  $As_2O_3$ . Under some conditions it is possible to obtain a fourth wave due to reduction of As to  $AsH_3$ , which increases the sensitivity of the polarographic method 10-fold. The potentials of the reduction of these compds. become more neg. as the As concn. increases and the acid concn. decreases. The wave corresponding to the reaction  $As \rightarrow AsH_3$  cannot be observed in solns. of strong acids, nor in some org. acids (oxalic) nor in the presence of such substances as  $Pb$ ,  $Au$ ,  $Mg$ ,  $NO_3^-$ ,  $NO_2^-$ ,  $AsO_4^{3-}$  and others which are reduced on the cathode or which liberate  $H_2$  at a more pos. potential.  
H. Z. Kamich

ASB-31A METALLURGICAL LITERATURE CLASSIFICATION

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Movement of solution near a dropping cathode. II. Velocity of movement of solution and increase of the current strength on the polarographic curve "current strength-voltage." T. A. Krinitsyna and N. N. Kalanov (*J. Phys Chem Russ.*, 1911, 15, 475-480). The additional current strength due to the stirring of the solution by the expanding Hg drop is  $\propto c$ ,  $c$  being the concn. of the ions which are reduced at the cathode,  $l$  their mobility, and  $v$  the velocity of the solution near the drop;  $v$  is determined by observing graphite particles suspended in the solution. This proportionality is confirmed for Cd, Pb, Mn, Co, Cu, Fe, Cr, and Th ions in conc. HCl solution. J. J. D.

Motion of solution near the dropping mercury cathode  
 III. Motion in concentrated solutions of foreign salts  
 and formation of false waves on the polarographic curve  
 T. A. Kryukova and B. N. Kabanov (Moscow Inst. of  
~~Chemical Technology~~ and Inzhetfunktsion). *J. Gen. Chem.* (U.S.S.R.) 15, 304-302 (1945) (English summary); cf. C. I. 36, 6430. A study was made of the rate of motion of  
 soln. near the Hg drop as dependent on potential, dropping  
 rate of Hg and the capillary dimensions. It was shown  
 that in the presence of concd. foreign salts the motion of  
 soln. near the dropping electrode is primarily affected by  
 the motion of Hg in the drop caused by the effluence from  
 the capillary. This motion produces a considerable in-  
 crease of the final current which can attain 5 times the  
 magnitude of that obtained in a soln. kept quiescent.  
 The rate of this motion varies with the potentials applied;  
 hence it causes a false wave in the polarographic curve.  
 The effect can be lessened by proper selection of capillary  
 dimensions and the rate of Hg outflow. Differs shaped as  
 very long waves appear to have the best characteristics.  
 G. M. Kozlovskii

ASB. 55.4 METALLURGICAL LITERATURE CLASSIFICATION

4

Effect of the adsorption of surface-active substances on the movement of drops during the flow of mercury from a dropping electrode. T. A. Kryukova. *J. Phys. Chem.* (U.S.S.R.) 20, 1179 (1946) (in Russian). Addn. of surface-active compds. (amyl alc., phenol, methylene blue, K ohate) to 0.001 N  $PbCl_2$  + aq. KCl lowers the first part of the polarographic wave and often simulates an addnl. wave. Similar effects are shown by starch, gelatin, agar, and saponin in various electrolytes. The explanation is: in the growing drop the liq surface moves up. This causes concn. of adsorbed surface-active substances near the upper part of the drop (i.e., its base). Consequently, the upper part has a lower surface tension than the lower part, and this difference in surface tensions works against the rising of the surface. In this manner the stirring caused by surface movements is reduced, and so is the diffusion current. At high charges of the drop the adsorption is so small that the surface movements of liq proceed undisturbed. The concns. of surface-active substances required to influence these movements at low charges are very small; e.g., 0.1 M/l. of *n*-naphthol, filtration through a paper filter or a brief immersion of a clean rubber stopper into the soln. suffices to distort the polarographic wave. J. J. Hukerman

**Polarographic maximums of the first and the second kind.** G. A. Eryukova (Acad. Sci. U.S.S.R., Moscow) / *J. Phys. Chem. (U.S.S.R.)* 21, 365 (5:1917) (in Russian), cf. C.A. 40, 3112. — Polarographic max. of the first kind are caused by the nonuniform polarization of different parts of the Hg drop. The max. of the second kind are due to stirring of the electrolyte caused by the growth of the Hg drops. This stirring is reduced by the elec. charge on the drop, cf. Frumkin and Levich, C.A. 40, 6044, hence it has the greatest intensity at the electrocapillary max. It is greater the more coned, the electrolyte soln. If Hg drops fall rapidly in a  $\text{Hg}_2(\text{NO}_3)_2\text{-KNO}_3$  soln. and the concn. of  $\text{KNO}_3$  is raised, the intensity of stirring passes through a min.: at small  $\text{KNO}_3$  concns. it decreases with concn. because the nonuniform polarization decreases, and at high  $\text{KNO}_3$  concn. it increases because the braking by elec. charges on Hg diminishes. The simultaneous action of both mechanisms produces complicated movements of the Hg surface, discussed in the original paper. J. J. Bikerman

I. I. Bickerman

**CIA-RDP86-00513R000826920007-7"**

1st and 2nd Series		Processes and Properties Index		3rd and 4th Series	
<p>Influence of adsorption on the surface motion of dropping mercury. T. A. Kryukova (Acad. Sci., Moscow). <i>Acta Physicochim. U.R.S.S.</i> 22, 341-91 (1947) (in English). See C.I. 41, 3044c. A. R. P.</p> <p><i>Anal. Physical Chemistry</i> 11:1113</p>					
<p>ANAL. &amp; METALLURGICAL LITERATURE CLASSIFICATION</p>					
1st and 2nd Series		3rd and 4th Series		5th and 6th Series	
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1ST AND 2ND CODES										3RD AND 4TH CODES									
PROCESSING AND REPORTING CODES																			
15																			
<p><b>Polarographic Maximums of the Second Order and the Method of Its Application to Analytical Chemistry. II. Suppression of the Maximum by Surface-Active Substances and the Formation of False Waves. (in Russian.) T. A. Kryukova. Zavodskaya Laboratoriya (Factory Laboratory), v. 14, June 1948, p. 639-648.</b></p> <p>Discusses origin of surface-active substances and their inhibition of the motion of the mercury droplet surface in those potential fields in which they are adsorbed—thus forming apparent waves on the polarographic curves analogous to the reduction waves of certain cations.</p>																			
METALLURGICAL LITERATURE CLASSIFICATION																			
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10000 110 00100										10000 110 00100									

CA

7

Polarographic maximum of the second kind and its utilization in analytical chemistry. III. T. A. Kryukova. *Zvezdskaya Lab.* 14, 767-72 (1948); *cf. C.A.* 43, 4971d. — To obtain a max. suitable for analytical purposes, it is necessary to use concd. solns. of strong electrolytes contg. reducible ions. For detg. the purity of water, a soln. of

3 N KCl +  $3 \times 10^{-4}$  N HgCl<sub>2</sub> is suitable. This soln. was used in an improved type cell (C.A. 40, 3349). If, was passed in for 3-4 hrs., the Hg outflow was then raised to increase the diffusion current 1.5-2 times, and the polarogram was recorded. Curves were obtained of the above soln. in pure water and in water contg.  $10^{-4}$  mole per l. of 2-naphthol,  $10^{-4}$  mole of naphthalene, and 0.01% gelatin, with and without the correction for the charging current. In detg. the purity of slightly impure waters, this correction must be applied. The charging current can be detd. by recording the curve in the absence of Hg, O<sub>2</sub>, and any other substance capable of being reduced. To avoid this tedious work of purification, it can be calcd. from  $i = 0.005Np$ , where  $i$  is charge of the surface,  $N$  is the number of drops falling per sec., and  $p$  is the wt. of a drop. As little as  $30^{-4}$  mole of surface-active substances can be detd. A diagram of the cell and polarographic curves are shown.

B. Z. K.



Retardation of tangential movements of the surface of mercury drops by butyl alcohol solutions. T. A. Kravtsova and A. N. Frumkin. *Zhur. Fiz. Khim.* 33, 119-27 (1919).—Hg is dropped from a glass capillary, radius 0.016 cm., into 3 N KCl + 0.013 N  $\text{HgCl}_2$  at the rates (v) of 1 drop in 0.6 or 2.3 sec. It was cathodically polarized. At, e.g.,  $-0.6$  v. against N HgCl<sub>2</sub>/Hg electrode the limiting current strength  $i$  was 4.7 or 14.1 microamp. at the limiting rates of drop. When the tangential movement of the drop surface was stopped by addn. of gelatin, the current ( $i_0$ ) became 2.3 and 4.0. When BuOH (I) was added instead of gelatin, the current was reduced; minima of this current ( $i_1$ ) were observed in 0.03 M I and at about  $-0.7$  v. At e.m.f. less than  $-0.4$  v. and above  $-1.4$  v. the effect of I was very small. From the values of  $i$ ,  $i_0$ , and  $i_1$  the rate of tangential movement of the drop can be calc'd. cf. Frumkin and Levikh, C.A. 42, 3244b. The retardation of this movement by I is semi-quantitatively accounted for by assuming that the diffusion of I toward the growing drop is the rate-dets. factor. The diffusion mechanism is confirmed by the effect of  $\nu$  on the degree of retardation; if the adsorption process were the slowest part of the reaction, the retardation would have been independent of  $\nu$ ; this gives the lower limit for the rate of the adsorption process. For the above calcn., the adsorption of I by Hg at different e.m.f. was needed. It was det'd. from new measurements of the electrode potential of Hg in 3 N KCl without and in the presence of I (0.016-0.13 M).

**V. I. Bikerman**

Inst. Physical Chemistry, USSR  
FEATURE CLASSIFICATION

KRYUKOVA, T.A.

1A 41/4977

USSR/Chemistry - Peroxydisulfates, Apr 49  
Reduction of  
Chemistry - Reactions, Electro-  
chemical

"The Reduction of Persulfate in a Dropping Hg-Cathode and the Effect of the Electric Field in the Neighborhood of the Electrode Surface-Charges Upon the Course of Electrochemical Reaction," T. A. Kryukova, Inst Phys Chem, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LIV, No 4

Reduction of persulfate anions studied showed

41/4977

USSR/Chemistry - Peroxydisulfates, Apr 49  
Reduction of (Contd.)

that action of electrical field around electrode surface-charges on concentration of reacting particles is a factor determining course of electrochemical reaction. Also showed that appearance of electrochemical barrier caused by action of the field leads, in certain conditions, to complete stoppage of the reaction despite increase of the superimposed polarization. Submitted by Acad A. N. Frumkin, 5 Feb 49.

41/4977

*Handwritten:* K. E. H. 10-1-71

*Handwritten:* 11/2/71

✓ Adsorption polarographic analysis T. A. Jacobson  
 Akad. Nauk S.S.S.R., Inst. Fiz. Khim. No. 1,  
 Novye Metody Fiz. Khim. Izd. Gos. Pechatnits. Yuzentit,  
 123-31 (1959).—The polarographic curves change greatly, if  
 there is a material in the soln. which can be adsorbed.  
 Such curves are shown for KCl + HgCl<sub>2</sub> in the presence of  
 AuOH (I), for KCl in the presence of salicylic acid, n-  
 octyl alc., and tetramethyl ammonium salts. Such ad-  
 sorbed matter can be a gas too, thus, curves in distd. and  
 dried H<sub>2</sub>O are quite different. Other materials investi-  
 gated were methylene blue, nitrosodimethylaniline, 2-  
 naphthol, and the addn. of KMnO<sub>4</sub> in the presence of ad-  
 sorbable matter. HCl gave different curves, if used fresh  
 or after it had been in contact with polyvinyl chloride for  
 1 month. If the current intensity is plotted vs. the log of  
 the concn. for all the normal alcs. from C<sub>2</sub> to C<sub>6</sub>, a series of  
 parallel curves is obtained; the curves per se are difficult to  
 reproduce, as e.g. with I it makes quite a difference, whether  
 the I was used from the bottle, freshly distilled, or doubly  
 distilled. Unadsorbed material, such as EtOH has no in-  
 fluence of itself, but an influence will be noted if O is pres-  
 ent, which can be adsorbed. Once the conditions have  
 been standardized, these measurements can be used for  
 quant. analysis; thus curves are shown in KCl + HgCl<sub>2</sub>  
 for various concns. of BuOH.  
 Werner Jacobson

CA

Simplified polarographic determination of organic substances of high surface activity in water. V. F. A. Kryukova (Acad. Sci. U.S.S.R., Moscow). *Zhurnal Khim. Fiz.* 18, 134-42 (1940); cf. C.A. 44, 5757d. The use of O dissolved in the H<sub>2</sub>O under test instead of Hg drops for the production of current, reduces the time to 10-20 min. It is possible to det. surface active substances in aq. soln. by the decrease of the current strength caused by retardation of the movement of the surface layers of the Hg drops, if these substances are not oxidized or reduced on the Hg electrode. The results are expressed in arbitrary relative units. Results with octanol, methylene blue, Me<sub>4</sub>NCl, NO, 2-CuH<sub>2</sub>OH, and various samples of contaminated water are shown graphically.

(I. M. Koudasoff)

CA

Polarographic maximums due to the action of an external electric field. T. I. Popova and T. A. Kiyukova (Phys.-

Chem. Inst. Acad. Sci. USSR, Moscow) *Izv. Akad. Nauk SSSR, Khim.* 25, 363-68 (1961).—According to the theory of polarographic max. of Franklin and Levich (C.A. 61, 3366), the velocity ( $v$ ) of motion of the surface of the dropping electrode passes through a max. for definite values of the pos. and neg. surface charges. Thus, 2 max. on the current-potential curve ought to be observed to the left and to the right, resp., of the electrocapillary zero during the discharge of ions which are reduced at potentials corresponding to the pos. branch of the electrocapillary curve. A neg. discharge of ions which are reduced at potentials corresponding to the pos. branch of the electrocapillary curve has never been observed (that is a max. on the neg. branch) has never been observed so far, because, among other factors, depends on the supply of  $d^+$  polarizer to the various parts of the Hg drop. A neg. max. is observed when the supply is made uniform over the electrode surface or when the surface motion is made independent of the electrochem. process: this can be done by a transverse external elec. field applied to the Hg electrode dipping into a very dil. soln. of Hg ions acting as indicator of the surface motion. In a soln. of  $0.78 \times 10^{-4} N Hg(ClO_4)_2 + 0.01 N KClO_4$ , only the dis-

over

anion current is recorded in the absence of the external field. When the latter is applied (0.21 to 0.42 v./cm.), 2 max. appear sym. with respect to the potential of zero charge (0.10-0.2 v. to the pos. side and 0.20-0.3 v. to the neg. side). In agreement with the theory, the max. current decreases with decreasing cond. of the soln., the current of the neg. max. depends linearly on the concn. of reduced species. The pos. max. does not depend linearly on concn. for high values of the latter. With large  $Hg^{++}$  concn., the sym. shape of the max. are displaced toward more neg. potentials. From Franklin's theory, the potentials (in v., relative to a 0.01 N calomel electrode) at which  $v$  is max., are calcd.: in a 0.002 N  $Hg(ClO_4)_2$  soln. with a sp. cond. of  $2.84 \times 10^{-4}$  ohm $^{-1}$ cm. $^{-1}$ , the calcd. values are -0.82 and -0.72, whereas the observed values of the potential at which the current max. are observed are -0.8 and -0.7, resp.

Michel Szwarc

KRYUKOVA, T. A.

Dissertation "Maxima on the 'Current Potential' Curve and their Significance for Polarographic Analysis." Dr Chem Sci, Inst for Physical Chemistry, Acad Sci USSR, Moscow 1953

W-30928

SO: Referativnyi Zhurnal, No. 5 Dec 1953, Moscow, AN USSR (~~XXXXXX~~)

KRYUKOVA, T. A.

Adsorption of surface-active substances and the progress of electrochemical reactions. A. P. Martinyan and T. A. Kryukova (Inst. Phys.-Chem., Acad. Sci. U.S.S.R., Moscow). *Zhur. Fiz. Khim.* 27, 851-65 (1953); cf. C.A. 45, 10944. — The polarization curves (current strength  $i$  against electrode potential  $\phi$  referred to N.HgCl electrode) on dropping Hg were detd. (a) at slow flow of Hg, i.e. in the absence of tangential movements in the drop surface, and (b) in the presence of such movements. The  $i$  in cathodic deposition of Cu, Cd, or Zn was lowered by surface-active addns., e.g., 0.003*N* 1-pentanol (I) in  $N$  Na<sub>2</sub>SO<sub>4</sub> + 0.003*N* CuSO<sub>4</sub> depressed  $i$  10-fold at  $\phi = -0.63$  V. This depression was smaller in nitrate solns. and smaller still in the following order: ClO<sub>4</sub><sup>-</sup> > Cl<sup>-</sup> > Br<sup>-</sup> solns. Thus, there was no depression by I when  $N$  KCl was the background electrolyte. Addn. of 0.07*N* KBr to 0.03*N* Na<sub>2</sub>SO<sub>4</sub> also eliminated the depression. The effect of I on the polarization curves of Cd and Zn was smaller than for Cu because of the larger neg.  $\phi$  needed. BuNH and (BuN)SO<sub>4</sub> (II) lowered  $i$  also for Cd and Zn; chlorides counteracted this on Cd but were inactive on Zn. There is cathodic reduction of K<sub>2</sub>S<sub>2</sub>O<sub>8</sub> was depressed by I, BuNH, or sulfosalicylic acid (III) while II was inactive. However, II caused depression of  $i$  in the presence of a large excess of KBr. The  $i$  in the electroreduction of cytochrome  $c$  was lowered by I, II, or III and the depression was independent of the background electrolyte. In all the above cathodic processes, the effect of the surface-active addn. was negligible at greater polarization, at which adsorption of the addn. was small. The  $i$  in  $N$  Na<sub>2</sub>SO<sub>4</sub> + 0.003*N* CuSO<sub>4</sub> was at least 10% greater than the limiting (diffusion) current  $i_{\infty}$  at  $\phi = -0.3$  and  $-1.4$  V. Greater excess of II lowered  $i$  to  $i_{\infty}$  at  $\phi$  between  $-0.1$  and  $-0.3$  V. Greater excess of II depressed  $i$  between  $-0.1$  and  $-0.3$  V. In  $N$  KCl + 0.003*N* CuSO<sub>4</sub>, II, whatever its concn., could not depress  $i$  below  $i_{\infty}$ . Thus, in chloride solns, only the movement of the drop surface was abolished by II. At least  $i$  at a const. concn.  $\phi$  of the surface-active addn. was small— the longer the C chain of the addn., thus the min.  $i$  of 10<sup>-9</sup> amp. was observed in approx. 0.08*N* BuOH and 0.003*N* 1-octanol, both in  $N$  Na<sub>2</sub>SO<sub>4</sub> + 0.003*N* CuSO<sub>4</sub>. II was a little more active than octanol. The  $\phi$  at which  $i$  passed through a min. little depended on the chain length but was more neg. the greater  $\phi$ , e.g., it was  $-0.4$  and  $-0.5$  V. when  $\phi$  of I was 0.16*N* and 0.1*N*, resp. The effect of addn. on  $i$  could not be due to complex formation or to a film impenetrable for ions; it is best accounted for by assuming that the addns. retarded the discharge of ions.

J. J. Bierman



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USSR/Electrochemistry

B-12

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26336

Author : T.A. Kryukova

Title : Retardation of Tangential Movements of Mercury Drop Surface  
by Charges of Double Electric Layer and Shape of Polarographic  
Curve.

Orig Pub : Zh. fiz. khimii, 1956, 30, No 8, 1792-1800

Abstract : The ratios of speeds ( $v$ ) of the tangential movement of Hg drop surface retarded and not retarded by the charges of the double electric layer were computed and compared with experimental data of reactions of  $Hg^{2+}$ ,  $Cd^{2+}$  and  $O_2$  reduction on the background of KCl in various concentrations. The computation shows that in case of the presence of maxima (M) of the 2nd type,  $v$  has the maximum value at the potential of the zero charge (PZC). The lower the solution concentration is, the more rapidly  $v$  decreases receding from PZC. The retardation by surface charges is somewhat greater than the computed. In concentrated solutions the retarding by surface charges is not great, and the current decrease with the potential rise ( $\varphi$ ) is little. Therefore, the shape of a wave with M is little different from that of a wave with  $i_d$ , especially without adjustment for the

Card : 1/2

USSR/Electrochemistry

B-12

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26336

charging current. In less concentrated solutions (1 and 0.1 n. KCl),  $i_{Cd^{2+}}$  decreases so rapidly together with the rise of  $\varphi$ , that the M-s of the 2nd type begin to look as the M-s of the 1st type. The experiment shows that in case of M-s of the 1st type, the course of the curve  $(i, \varphi)$  is determined by the character of the dependence of the surface mobility  $Z$  on  $\varphi$ .  $Z$  attains its maximum value  $[Z(\max.)]$  at  $\varphi$ , which is the farther away from PZC, the greater the solution concentration is. The current starts to decrease with the decrease of  $Z$ . Consequently, the peak of the M of the 1st type must be at the same  $\varphi$  as  $Z(\max.)$ . The comparison of  $\varphi$  for  $Z(\max.)$  with the experimentally determined  $\varphi$  of the M peak confirms this deduction.

Card : 2/2

KRYUKOVA, T. A.

"On Polarographic Maxima of the First Glass and Maxima Inversion."

paper presented at the Colloquium on Polarography, 3-7 June 1957, Erich-Muller-Inst., Electrochemistry and Physical Chem, in Technischer Hochschule Dresden. (not read by author)

Chemische Technik, No. 1, Jan. 1958.

5(2)

PHASE I BOOK EXPLOITATION

SOV/3139

Kryukova, Tat'yana Aleksandrovna, Sof'ya Il'inichna Sinyakova, and  
Tat'yana Vasil'yevna Aref'yeva

Polyarograficheskiy analiz (Polarographic Analysis) Moscow,  
Goskhimizdat, 1959. 772 p. Errata slip inserted. 5,000  
copies printed.

Ed.: G. Ye. Lur'ye; Tech. Ed.: Ye. G. Shpak.

**PURPOSE:** This book is intended for the staff of chemical research  
and analysis laboratories of scientific research institutes,  
schools of higher learning, and industrial enterprises.

**COVERAGE:** The book presents the theoretical and experimental  
principles of polarographic analysis and describes the con-  
struction of polarographs and the techniques of polarographic  
measurements. It describes polarographic analysis with dropping  
mercury electrodes, including amperometric titration, polaro-  
graphic adsorption analysis, and oscilloscopic polarography. It  
also describes various methods for the determination of organic  
and inorganic cations and anions. The authors thank Professor

Card 1/49

**Polarographic Analysis**

SOV/3139

B. N. Kabanov; Professor Yu. S. Lyalikov; E. S. Levin, Candidate of Chemical Sciences; and M. B. Bardin, Candidate of Chemical Sciences. Extensive bibliographies of Soviet and foreign literature accompany each chapter.

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Card 2/49

POPOVA, T.I.; KRYUKOVA, T.A. (Moscow)

Polarographic peaks of the first order. Part 1: Dependence of the peak current on the concentration of the substance being reduced and on the electric conductivity of the solution. Zhur.fiz.khim. 34 no.6:1226-1233  
Je '60. (MIRA 13:7)

1. Akademiya nauk SSSR, Institut elektrokhimii, Moskva.  
(Reduction, Electrolytic) (Polarography)

ROMANOV, T. I.; KRYUKOVA, T. A.; PRISTAVKIN, V. V.

"Ispol'zovaniye etnograficheskikh kollektiy kak istochnika v nauchno-issledovatel'skoy rabote (na opyte Gosudarstvennogo muzeya etnografii narodov SSSR)."

report submitted for 7th Intl Cong, Anthropological & Ethnological Sciences, Moscow, 3-10 Aug 64.



LIPCHIN, N.N.; KRYUKOVA, T.G.; OSION, N.L.

Effect of the rate of heating on the phase recrystallization  
of hardened 60C2 steel. Metalloved. 1 term. obr. met. no.8:  
5-8 Ag '64. (MIRA 17:10)

1. Permskiy politekhnicheskii institut.

КРЫЖКОВА, Т. В.

5689 . Ogurtsy Na Sakh. line. Yuzhno—Sakhalinsk, Gaz. (Sov. Sakhalin), 1954  
23s Ill. 20 sm. (Sakhalinskiy Filial Akad. Nayk SSR. Nauch—Popul. Seriya).  
1,500 <sup>1</sup>kz. 60k-(55-1473) 635.63(57.343.4)

SO: Knizhanaya, Letopis, Vol. 1, 1955

USSR/Cultivated Plants - Potatoes, Vegetables, Melons.

H-5

Abs Jour : Ref Zhur - Biol., No 9, 1956, 39312

Author : Bludina, T.A., Kryukova, T.N.

Inst : Sakhalin Complex Scientific Research Institute AS USSR

Title : The Local Sakhalin Cabbage Variety.

Orig Pub : Sbornik. Sakhalinsk. kompleksn. n.-i. in-ta, AN USSR, 1956, vyp. 4, 102-106.

Abstract : Local cabbage varieties were studied by the Sakhalin branch of AN USSR and a late Kostnaya variety was isolated. This variety is characterized by the following data: average weight of the head - 6-7 kg; vegetation period: 160-190 days; ratio of height of head to its diameter: 0.60 - 0.75; sugar content: 6.76% of its raw weight (against 3.64% for the Slava variety). Flatter

Card 1/2

- 69 -

USSR/Cultivated Plants - Potatoes, Vegetables, Melons.

11-9

Abs Jour : 1st Jour - Biol., No 9, 1956, 39312

heads are distinguished by greater saccharinity. Their  
storing capacity and taste are good. -- V.S. Simal'ko

Card 2/2

ZIMINA, T.A.; KRYUKOVA, T.M.

Wild onions of Sakhalin and outlook for their introduction into cultivation. Bot.shur. 45 no.6:844-861 Je '60.  
(MIRA 13:7)

1. Sakhalinskiy kompleksnyy nauchno-issledovatel'skiy institut Akademii nauk SSSR, Novo-Aleksandrovska na Sakhaline.  
(Sakhalin--Onions) (Plant introduction)

ZAVILOVICH, M.; KRYUKOVA, T.; KATSHAN, L. (Leningrad)

From the specialized state farm to the store. Sov. tovg. 33 no.5;  
10-12 My '60. (MIRA 13:11)  
(Leningrad--Vegetable trade)

PIVOVAROV, A.; KRYUKOVA, T., assistant.

Self-service in a vegetable and fruit store. Sov. torg. 33  
no. 9:28-30 S '60. (H.H. 14:2)

1. Direktor magazina sovkhosa "Udarnik," Leningrad (for Pivovarov).
2. Institut sovetskoy torgovli im. Fr. Engel'sa (for Kryukova).  
(Leningrad--Self-service stores)

ZIMINA, T.A.; KATSNEL'SON, I.A.; ZHILIN, S.I. Prinsipali uchastye:  
KRYUKOVA, T.N., mladshiy nauchnyy sotrudnik; ROMODANOVA, R.I.,  
laborant.

Phytoncidal characteristics of onion, garlic, and some other  
plants of Sakhalin. Izv. SO AN SSSR no.4 Ser. biol.-med.nauk  
no.1: 47-52'63. (MIRA 16:8)

1. Sakhalinskiy kompleksnyy nauchno-issledovatel'skiy institut  
Sibirskogo otdeleniya AN SSSR.  
(SAKHALIN-PHYTONCIDES) (SAKHALIN-ALLIUM)



ZIMINA, T.A.; KRYUKOVA, T.N.; CHUMAKOVSKIY, N.N.

Development of new forms and anomalies of some local corn populations in Sakhalin. Izv. SO AN SSSR no.8 Ser. biol.-med. nauk  
no.2:7-14 '64 (MIRA 18:1)

1. Sakhalinskiy kompleksnyy nauchno-issledovatel'skiy institut  
Sibirskogo otdeleniya AN SSSR, i Sakhalinskiy pedagogicheskii  
institut.

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**CIA-RDP86-00513R000826920007-7"**

137-58-6-11967

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 111 (USSR)

AUTHORS: Golutvin, Yu.M., Kryukova, V.N., Troitskaya, L.N.,  
Malysheva, T.V., Butorin, K.K.

TITLE: Chemical Dressing of Manganese Ores of the Ikat-Garga  
Deposit (Khimicheskoye obogashcheniye margantsevykh rud  
Ikat-Garginskogo mestorozhdeniya)

PERIODICAL: Izv. vost. fil. AN SSSR, 1957, Nr 7, pp 31-39

ABSTRACT: Three methods of chemical dressing of Mn ores by leaching  
are tested: 1)  $H_2SO_4$ , 2)  $SO_2$ , and 3)  $(NH_4)_2SO_4$ . It is shown  
that concentrates containing 52.2, 58, and 50%, respectively,  
with yields of 27.9, 23.6, and 25%, may be obtained. The pre-  
sence of large amounts of Ca in the ore necessitates an ele-  
vated consumption of leaching agents.

- N.P.  
1. Manganese ores--Processing 2. Sulfuric acid--Effectiveness  
3. Sulfur dioxide--Effectiveness 4. Ammonium sulfate--Effectiveness  
5. Calcium--Properties

Card 1/1

*1. Vostochno-sibirskiy filial AN S. S. R.*

GOLUTVIN, Yu.M.; TROITSKAYA, L.N.; KRYUKOVA, V.N.

Thermographic investigation of clays from the Cherenkhovo deposits. Izv.Sib.otd.AN SSSR no.11:156-159 '58. (MIRA 12:2)

1. Vostochno-Sibirskiy filial AN SSSR.  
(Cherenkhovo Basin--Clay--Analysis)

RUBTSOV, V.A.; SERGEYEV, V.I.; LUKANOVA, M.V.; KRASIL'NIKOV, A.I.;  
KRYUKOVA, V.N.; BELYUTINA, O.I.

Handbook on flax spinning. Reviewed by V.A. Rubtsov and others.  
Tekst.prom. 18 no.10:62,65 0 '58. (MIRA 11:11)

1. Zavednyushchaya tekhnicheskoy bibliotekoy Orshanskogo l'no-  
kombinata (for Belyutina).  
(Flax)

8/031/60/000/011/003/008  
A161/A133

AUTHORS: Kryukova, V. N., Tseft, A.L.

TITLE: Cementation of nickel and cobalt from chloride solutions by metallic iron

PERIODICAL: Akademiya nauk Kazakgskoy SSR, Vestnik, no, 11, 1960, 24 - 33

TEXT: The purpose of the described investigation was to study the reactions in contact reduction and find out the optimum conditions for a more complete separation of nickel and cobalt from solutions. Reactions were studied in a glass vessel with a hydraulic seal and a mixer. The vessel with the solution was placed into a water thermostat with automatic temperature control, and certain quantities of powder iron were added to the solution. The solid matter was filtered off after the experiment, and the content of metal ions not involved in reaction and the pH of the solution were measured. A  $\Lambda\Lambda-5$  (LP-5) potentiometer with a glass electrode was used for pH measurements; nickel was determined by the volume method with dimethyl glyoxime and cobalt by the colorimetric method with nitroso-R-salt. The nickel content in the solution was 10.01 g/liter, the cobalt content 0.46 g/liter; the acidity of initial solution was 1.5 and 2 pH;

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iron powder with 0.05 mm grain was reduced by hydrogen. The effect of temperature, time, quantity of metallic iron and acidity of the solution was studied. The cementation degree of nickel was low in room temperature but increased with rising temperature and reached 91.1% at 100°C, with a slowing down of the process after some time at 80 and 100°, which may be explained by slow ions diffusion through the nickel film in the end phase of the process. Higher additions of powder iron accelerated the reaction and increased the degree of cementation. The acidity of the solution dropped and reached 3.8 - 3.9 pH in separate cases. The process kinetics can be described by the equation

$$\alpha = 1 - e^{-kt} \quad (3)$$

where  $\alpha$  is the quantity of matter that participated in the reaction, and  $t$  - the time from the start of reaction. The cementation of cobalt was very low at room temperature, increased with rising temperatures and after 30 min at 100° it slowed down drastically, apparently due to the formed cobalt film. Combined cementation of nickel and cobalt was studied in a solution corresponding to the conventional hydrometallurgical processing of matte nickel, at 109°C. The cementation degree was the same as of nickel and cobalt separately. It was found that

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the cementation process can be accelerated by using a finer powder, increasing the excess of powder in the solution, and by using mechanical grinding, i.e., a rubbing mixer removing the film of precipitated metal in the course of cementation process. Cobalt precipitation reached 90% with a mechanical rubbing mixer, and nickel was precipitated nearly completely. The acidity of solution had some effect - precipitation was higher at constant acidity, apparently due to the porosity of the forming film facilitating the ions diffusion. Conclusions: The reactions at low temperatures are in the kinetic phase and meet the equation of the first order; the activation energy of nickel is 10,300 cal/mole, and of cobalt 10,850 cal/mole; at 100°C the process is in the diffusion phase, and the deposited metal film resists the diffusion; the reaction can be made more complete by increasing the excess of iron, using finer iron powder, and using mechanical rubbing and constant acidity of solution; practically complete extraction of nickel and cobalt is possible from solutions containing both when the forming solid phase is rubbed off mechanically in the process. There are 7 figures and 6 Soviet-bloc references.

Card 3/3



TSEPT, A.L.; KRYUKOVA, V.N.

Process of the hydrochloric acid and salt leaching of nickel matte.  
Trudy Vost.-Sib.fil. AN SSSR no.25:69-75 '60. (MIRA 13:9)  
(Nickel)

KRYUKOVA, V.N.; TSEPT, A.L.; SERIKOV, A.P.

Precipitation of nickel and cobalt from a ferrous chloride solution.  
Trudy Vost.-Sib.fil. AN SSSR no.25:76-82 '60. (MIRA 13:9)  
(Nickel) (Cobalt)

KRYUKOVA, V.N.; TSEFT, A.L.

Study of anodic polarisation during the electrolytic oxidation of  
iron. Trudy Vost.-Sib.fil. AN SSSR no.25:83-88 '60. (MIRA 13:9)  
(Polarization (Electricity)) (Iron)  
(Electrolysis)

BUYANOV, V. I.; KRYUKOVA, V. N.; GUBEYDULINA, A. V.

Contact reduction of tin from a chloride solution by pulverized  
zinc. Trudy Vost. Sib. fil. AN SSSR no.41:19-22 '62.

(MIRA 15:10)

1. Vostochno-Sibirskiy filial Sibirskogo otdeleniya AN SSSR.

{Tin—Electrometallurgy}  
{Cementation(Metallurgy)}

KRYUKOVA, V. N.

Kinetics of indium cementation from chloride solutions by  
pulverized zinc. Trudy Vost. Sib. fil. AN SSSR no.41:23-28  
'62. (MIRA 15:10)

1. Vostochno-Sibirskiy filial Sibirskogo otdeleniya AN SSSR,

(Indium—Electrometallurgy)  
(Cementation(Metallurgy))

KRYUKOVA, V.N.; TSEFT, A.L.

Kinetics of the dissolution of nickel and iron metals in  
solutions of hydrochloric acid and ferric chloride. Trudy  
IPI no.18:40-47 '63. (MIRA 17:6)

KRYUKOVA, V.N.; RUMYANTSEV, Yu.V.; BOLONDZ', F.M.

Investigating the sulfatizing roasting of Transbaikalia  
copper ores. Report No. 1. Trudy IPI no.18:56-64 '63.

Investigating the sulfatizing roasting of Transbaikalia  
copper ores. Report No. 2. Ibid.:65-70 ' (MIRA 17:6)

KREUKOVA, V.N.; TSEFT, A.L.

Complex hydrometallurgical processing of nickel matte. Trudy  
Inst.met.1 obog. AN Kazakh.SSR 11:3-9 '64.

(MIRA 18:4)



KRYUKOVA, V.S.

Exercise therapy for patients with spastic paraplegias and parapareses of the lower extremities following the removal of a spinal cord tumor. Vrach. delo no.6:142-143 Je'63.

(MIRA 16:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut neyrokhirurgii.

(SPINAL CORD — TUMORS) (PARAPLEGIA)  
(EXERCISE THERAPY)

Kryukova, Ye. I.

Kryukova, Ye. I. - "Secretion changes of the gastric glands of the stomach during hypoglycemia," Sbornik trudov (Voen.-med. akad. im. Kirova), Vol. XLIII, 1949, p. 119-25

SC: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949.)

MEZHEVALOVA, A.O., kand. med. nauk; REUTT, Ye.S.; KRYUKOVA, Ye.I.

Effect of the "regenerator" hyaluronic acid preparation in skin diseases. Vest. dermat. i ven. 33 no.2:59-60 Mr-Apr '59. (MIRA 12:7)

1. Is klinicheskoy bol'mitsy (nach. - prof. G.M. Novikov).  
(HYALURONIC ACID, ther. use,  
skin dis. (Rus))  
(SKIN DISEASES, ther.  
hyaluronic acid (Rus))

KUSHNIRENKO. M.D.; KRYUKOVA. Ya.Y.

Changes in the suctorial power of apple, pear, plum and peach  
leaves depending upon the soil moisture. Izv. AN Mold. SSR no.4:  
47-52 '63. (MIRA 18:1)

KRYUKOVA, Yu.B.

Sixth International Petroleum Congress. Neftekhimika 4 no.1:  
176-180 Ja-5'64 (HIRE 1786)

KRYUKOVA, Z.F.

Division of the Crimean Steppes by land forms. Vest. LGU 15  
no.6:106-113 '60. (MIRA 13:3)  
(Crimea--Physical geography)

KRYUKOVA, Z. I.

2a

Cytophysiological analysis of holocrine secretions of the sebaceous glands. V. Ya. Aleksandrov and Z. I. Kryukova. *Zhur. Obshch. Biol. (J. Gen. Biol.)* 10, 43-9 (1946).—Living cells in rabbit sebaceous glands were stained with neutral dyes, e.g., Sudan III. Histological examn. showed that as secretion proceeds, cell degradation accompanies increasing specialization in cell behavior and slowing down of cellular activity. Cells remain active up to a crit. accumulation of secretion, beyond which necrotic sets in. Necrotic cells show the usual paranecrotic signs of dying, e.g., diffuse coloring of the nucleus and cytoplasm, and coagulation in the nucleus.

Julian P. Smith

KRYUKOVA, Z.I.

ALEKSANDROV, V.I.; KRYUKOVA, Z.I.

Cytophysiologic analysis of natural destruction of cell elements  
in the organism. Izv. Akad. nauk SSSR. Ser. biol., Moskva no. 2:68-90  
Mr-Apr '50. (CML 19:2)

1. Of the Laboratory of Cytology, Department of General Morphology,  
Institute of Experimental Medicine AS USSR.



*Kryukova, Z.I.*

USSR/General Biology - Biochemistry and Biophysics.

B-1

Abs Jour : Ref Zhur - Biologiya, No 1, 1957, 133.

Author : Z.I. Kryukova.

Inst :

Title : Cytophysiological Changes Upon the Stimulation of Skin Tissue with the Extract of Naphthalane Oil.

Orig Pub : Arkhiv anatomii, gistol and embriologii, 1955, 32, No 4, 23-28.

Abst : The action of naphthalane oil causes a prolific activation of the skin elements, a thickening of the epidermis, and an increase in the number of connective tissue cells. To clarify the character of the processes which take place in the protoplasm of the cells, pieces of skin from the ear of a rabbit preliminarily subjected for a period of several days to the action of naphthalane oil were extirpated, and the process of their vital pigmentation with neutral red (concentration 0.01 to 0.075% in Ringer

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*Chair of Histology & Embryology - 1st Leningrad Med Inst.*

USSR/General Biology - Biochemistry and Biophysics.

B-1

Abs Jour : Ref Zhur - Biologiya, No 1, 1957, 133.

solution) was studied. A small piece of skin taken from the other ear of the same rabbit served as a control. Three to four days after smearing, the initially observed granular defection of the pigment is changed by a diffused pigmentation of epithelial and connective tissue cells; judging by the color of the pigment, the pH of the tissues shifted toward acidity. The second series of experiments have shown that the application of weaker concentrations of the dye (0.025-0.01%) causes a granular pigmentation of the cells. The author thinks that the lowering of cell resistance and their reversed shift towards paranecrosis is the result of the action of the oil. Upon prolonged smearing the cells of the epithelium, ten to fifteen days later again acquire the capacity of granular binding of the pigment. The author notes the similarity between the described modifications and

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USSR/General Biology - Biochemistry and Biophysics.

B-1

Abs Jour : Ref Zhur - Biologiya, No 1, 1957, 133.

the effect of stimulation in the nerve cells and muscular fibers observed. In all mentioned cases, a stimulation of granule formation is noted in the initial phase; in the later stages, there is a shift towards diffused paranecrotic pigmentation.

Card 3/3

KRYUTOVA, Z.I. (Leningrad, Kirovskiy pr. d.69-71, kv. 59)

Effect of naphthalen petroleum extract on the development of skin injuries induced by roentgen rays [with summary in English]. Arkh. anat. giat. i embr. 35 no.1:82-87 Ja-F '58. (MIRA 11:4)

1. Iz kafedry gistologii i embriologii (zav. - prof. G.S.Strelin)  
I Leningradskogo meditsinskogo institute im. I.P.Pavlova.

(ROENTGEN RAYS, effects,

on skin, eff. of petroleum prod. on develop. of inj.(Rus))

(SKIN, effect of radiations,

x-rays, eff. of petroleum prod. on develop. of inj.(Rus))

(PETROLEUM PRODUCTS, effects,

on skin inj. induced with x-rays (Rus))

KRYUKOVA, Z. M.: Master Tech Sci (diss) -- "Obtaining sulfate cellulose for fiber". Leningrad, 1959. 12 pp (Min Higher Educ USSR, Leningrad Order of Lenin Forestry Engineering Acad im S. M. Kirov), 150 copies (KL, No 14, 1959, 120)

PEREKAL'SKIY, N.P., doktor. tekhn. nauk; ANTONOVICH, L.N., kand. tekhn. nauk; KRYUKOVA, Z.M., kand. tekhn. nauk; KURYLEV, Yu.V., inzh.;  
Prinimali uchastiye: Ivanova, V.I., mladshiy nauchnyy sotrudnik;  
BRUSNICHKINA, V.F., starshiy laborant; LOKSH, R., studentka-  
diplomantka

Use of alkyl ketene dimers for paper sizing. Trudy LTITSBP  
no.10:15-26 '62. (MIRA 16:8)

(Sizing (Paper)) (Ketene)

MISHCHENKO, K.P., doktor khimicheskikh nauk; FLIS, I.Ye., kand.khimich. nauk;  
BYNYAYEVA, M.K., kand.khimich. nauk; KRYUKOVA, Z.M., kand.khimich.  
nauk; SALNIS, K.Yu., kand.khimich. nauk; BLOSHTEYN, I.I., inzh.;  
DOBRYSHIN, K.D., inzh.; FISH, S.I., inzh.

Technology of the production of chlorine dioxide. Trudy LTITSBP  
no.8:81-88 '61. (MIRA 16:9)

(Chlorine oxides)

...RAI'LEY, H.P.; ANTONOVICH, I.N.; RYKOVA, I.N.; RYKOVA, Y.S.

Use of alkyl ketene dimers in paper sizing. Tsvet. 1964. No. 12:227-  
231 '64. (NINA 15:8)



KRYUKOVA Z. S.

AUTHORS: Tarkovtsov, V. V., Rozenblyum, Ye. M.,  
Kryukova, Z. S., Klebanova, F. M.

75-6-15/23

TITLE: The Determination of Lead Sulphate in the Active Mass of Lead Storage Batteries (Ob opredelenii sulfata svintsa v aktivnykh massakh svintsovykh akkumulyatorov).

PERIODICAL: Zhurnal Analiticheskoy Khimii, 1957, Vol. 12, Nr 6, pp. 736-739 (USSR).

ABSTRACT: The unsuitability of the soda method for the determination of  $PbSO_4$  at a low lead content in the active mass of lead storage batteries is described. An incomplete solution of  $PbSO_4$  occurs because of  $Na_2CO_3$  whereby the results are lower. It is recommended to treat the positive charged platelets with acid and the negative charged platelets with a mixture consisting of equal parts of  $5NCH_3COOH$  and  $5NCH_3COONH_4$ . The proposed method is four- to five times shorter than the usual soda method. There are 3 tables.

Card 1/2

The Determination of Lead Sulphate in the Active Mass of Lead Storage Batteries. 75-6-35/23

ASSOCIATION: Institute of Scientific Research on Storage Batteries, Leningrad  
(Nauchno issledovatel'skiy akkumulyatornyy institut, Leningrad).

SUBMITTED: October 6, 1956.

AVAILABLE: Library of Congress.

1. Lead sulfite-Determination lead mass
2. Storage batteries-Active

Card 2/2

KRYUKOV, A.V.; KRYUKOVA, Z.V.

Pyropes from the "Tergeshskaya" pipe. Mat. po geol. i pol.iskop.Kras.  
kraia no.3:131-140 '62. (MIRA 17:2)

VINOGRADOV, Nikolay Vladimirovich; KRYUKOVSKAYA, B., red.; SIDERKO, N.,  
tekhn. red.

[Lectures on psychiatry] Lektsii po psikhiiatrii. Minak, Izd-  
vo "Belarus'", 1963. 187 p. (MIRA 17:1)

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